

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
13 May 2004 (13.05.2004)

PCT

(10) International Publication Number
WO 2004/040914 A1

(51) International Patent Classification⁷: **H04N 7/30**

(21) International Application Number:
PCT/IB2002/004577

(22) International Filing Date:
1 November 2002 (01.11.2002)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): **NOKIA CORPORATION [FI/FI]**; Keilalahdentie 4, FIN-02150 Espoo (FI).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **LAPPALAINEN, Ville [FI/FI]**; Neilikakkuja 3 D 10, FIN-33710 Tampere (FI). **SÄRKILJÄRVI, Juha [FI/FI]**; Teekkarinkatu 15 C 42, FIN-33720 Tampere (FI).

(74) Agent: AWAPATENT AB; Box 45086, S-104 30 Stockholm (SE).

(81) Designated States (national): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE

(utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK (utility model), SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

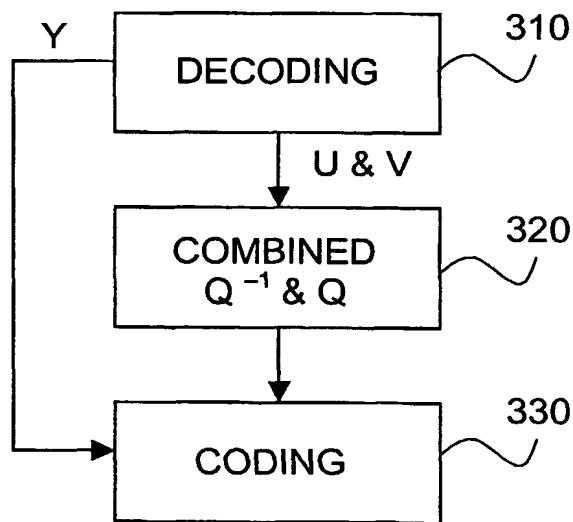
Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent*

[Continued on next page]

(54) Title: A METHOD AND DEVICE FOR TRANSCODING IMAGES

300



(57) Abstract: A method and a device for transcoding—digital images is disclosed. At least portions of a first image coded according to a first method is decoded for obtaining first coefficients of a luminance component and chrominance components of the first image. Furthermore, the first coefficients of the chrominance components of the first image are subjected to a combined inverse quantization according to the first method and quantization according to a second method. The combined inverse quantization and quantization uses a chrominance quantization matrix of the first method for inverse quantization according to the first method and a luminance quantization matrix of the first method for quantization according to the second method, for obtaining second coefficients for chrominance components of at least portions of a second image according to a second method having the same chroma format as the JPEG image. Finally, the first coefficients of the luminance component

of the at least portions of the first image and the second coefficients of the chrominance components of the at least portions of the second image are coded for obtaining at least portions of the second image decodable according to the second method.